

REMARKS

This communication responds to the Office Action mailed on February 21, 2007. Claims 1-41 have been canceled, and claims 42-50 have been added. As a result, claims 42-50 are now pending in this Application.

Interview Summary

The Applicant would like to thank the Examiner, Mr. Vincent Lai, for the courtesy of a telephone interview conducted on April 19, 2007 with the Applicant's representative, Mark V. Muller, and inventor Dr. Lizy John. During the interview, potential amendments to the pending claims were discussed. These amendments have been implemented herein as new claims 42-50 for purposes of clarity, rather than attempting to amend previously-pending claims to conform to the desired changes. Specific support for the amended language will be set forth below.

§101 Rejection of the Claims

Claims 1-9, 10-13, and 31-34 were rejected under 35 U.S.C. § 101 as being directed to a non-statutory subject matter, with the particular assertion being made that a "machine-accessible medium is not statutory subject matter." Since each of the pending claims 42-50 recites "an apparatus," and since all previously-pending claims have been canceled, it is believed this rejection under 35 U.S.C. § 101 is now moot. Reconsideration and withdrawal are respectfully requested.

§102 Rejection of the Claims

Claims 1-25 and 27-41 were rejected under 35 U.S.C. § 102(b) for anticipation by Li et al. (Improving Branch Predictability in Java Processing; hereinafter "Li"). The Applicant does not admit that Li is prior art and reserves the right to swear behind this reference at a later date. In addition, because the Applicant does not believe the Office has established a proper *prima facie* case of anticipation with respect to the amended claims, this rejection of the claims is respectfully traversed.

Claims 42-50 have been amended to recite the presence of an “agree branch prediction apparatus” (claims 42-44), a “multi-hybrid branch prediction apparatus” (claims 45-47), and a “bi-mode branch prediction apparatus” (claims 48-50). Each branch prediction apparatus, in turn, includes at least two branch history shift registers to store branch history information associated with divisions between user instructions/operating system instructions, or first/second operating contexts, respectively. Finally, claims 43-44, 46-47, and 49-50 include a Gshare branch predictor.

Specific support for the elements recited in claims 42-43, 45-46, and 48-49 can be found in paragraphs 31 and 49 of the Application, as-filed. Specific support for the elements recited in claims 44, 47, and 50 can be found in paragraphs 6, 31, and 49 of the Application, as-filed.

More specifically, the presence of a split branch history shift register predictor implemented as part of an agree branch prediction apparatus, a multi-hybrid branch prediction apparatus, and a bi-mode branch prediction apparatus (perhaps implementing a Gshare component) that operates to partition operating context branch histories is described in the Application as follows:

“As mentioned previously, OS-aware prediction techniques may be integrated with other predictors. For example, Multi-Hybrid, Agree, and Bi-Mode schemes do contain mechanisms tailored for branches with heterogeneous characteristics and/or de-aliasing. All these predictors may contain a Gshare predictor and/or Gshare indexing. To integrate the proposed mechanisms, a conventional Gshare component may be replaced with the proposed OS-aware (split-BHSR Gshare) split BHSR predictor 152 and/or the (split Gshare) split BHT predictor 154. ... Some embodiments, such as those having a split BHSR predictor 152 (see FIG. 1A), may be constructed so as to separate the BHSRs. In some embodiments, including those having a split BHT predictor 154 (see FIG. 1B), partitioning of the BHT 137 between user code and OS code or kernel code may occur statically, or may happen dynamically (e.g., as needed).” Application, paras. [0031] – [0032].

The Applicant was unable to find any evidence of a split branch history shift register predictor implemented as part of an agree branch prediction apparatus, a multi-hybrid branch prediction apparatus, or a bi-mode branch prediction apparatus within the bounds of Li. Therefore, since Li does not teach the identical invention claimed by the Applicant, a *prima facie* case of anticipation has not been properly established, and claims 42-50 should be in condition

for allowance. Reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(b) is respectfully requested.

§103 Rejection of the Claims

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Li. However, since claim 26 has been canceled, this rejection should be moot. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

The Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the Applicant's attorney at (210) 308-5677 to facilitate prosecution of this Application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date April 20, 2007

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 20th day of April 2007.

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